

REMARKS

Claims 1-53 are pending in the present application. Of the above claims 1-10 and 20-39 are withdrawn from consideration. By virtue of this response, claims 11, 50, and 51 are amended, and claim 49 is cancelled. Accordingly, claims 11-19, 40-48, and 50-53 are currently under consideration. Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented.

I. Claim Amendments

Claim 11 has been amended to include the features of claim 49, which has been cancelled. Further, claims 50 and 51 have been amended to now depend from claim 11. Accordingly, no new matter has been added.

II. Claim Rejections

1. Claims 11, 12, 14, 15, 18, 19, 40, 41, 43, 44, 47, and 48 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,932,045 to Campbell et al. (hereinafter "Campbell") in view of U.S. Patent No. 5,606,433 to Yin et al. (hereinafter "Yin").

A. Claims 11, 12, 14, 15, 18, 19, 47, and 48

Claim 11 has been amended to include the features of claim 49, i.e., "a reflective layer," which is not disclosed or suggested by the combination of Campbell and Yin, nor was it alleged to be disclosed in the Office Action. Claim 49 was rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell in view of Yin, and further in view of U.S. Patent No. 6,434,299 to Yudin et al. (hereinafter "Yudin"). Accordingly, the rejection to claim 49 is addressed under this heading for support of the allowability of claim 11.

With regard to claim 49, the Examiner states on Page 5 of the Office Action:

Yudin provides wavelength division multiplexing having diffraction gratings for optical elements such as holograms and substrates such as glass and plastic. See col. 8, lines 34-46 where Yudin teaches the following: Reflective concave diffraction grating 16 can be formed from a variety of materials and by a variety of techniques. For example, the reflective concave diffraction grating 16 can be formed by a three-dimensional hologram in a polymer medium, or by replicating a mechanically ruled master with a polymer material. In both cases, the polymer is overcoated with a thin, highly reflective metal layer such as, for example, gold or aluminum. Alternatively, the reflective concave diffraction grating 16 can be formed by chemically etching into a concave material such as, for example, glass or silicon, which is also overcoated with a thin, highly reflective metal layer such as, for example, gold or aluminum. Such teaching is equivalent to providing reflective layers of gold or aluminum on substrates as required by instant claims 49-53. It would have been obvious to one of ordinary skill in the art to include reflective layers of gold or aluminum on substrate and to contain diffractive grating because Yudin teaches the application for forming three-dimensional holograms as cited above. (Emphasis added).

Applicants respectfully disagree, and submit that the combination of Campbell, Yin, and Yudin fail to disclose or suggest a multilayer optical article having “a reflective layer,” as recited in claim 11 for at least the following reasons.

Initially, Applicants note that the reflective concave diffraction grating 16 of Yudin is a curved surface and is therefore not equivalent to “providing reflective layers...on substrates,” where surfaces of the substrates have the specified transmission flatness as recited in claim 11. Accordingly, the combination fails to teach all the features of claim 11.

Applicants further submit that the Examiner has failed to establish a teaching, suggestion, or motivation to combine the teachings of Campbell, Yin, and Yudin to meet the features of the present claims. The Examiner states that “[i]t would have been obvious to one of ordinary skill in the art to include reflective layers...because Yudin teaches the application for forming three-dimensional holograms...” Applicants disagree and submit that the Examiner is engaging in hindsight analysis. The assertion that Yudin teaches a reflective concave diffraction grating formed by a three-dimensional hologram does not provide any teaching, suggestion, or motivation to combine the reference teachings, let alone to modify the disclosures of Campbell and Yin to meet the features of the present claims. That is, the Examiner has not identified anything that

would suggest why one of ordinary skill in the art would combine the references, let alone combine and modify the references, to meet the specific features of the present claims. For example, a reflective concave diffraction grating formed by a three-dimensional grating in a polymer medium does not provide a teaching, suggestion, or motivation to one skilled in the art to include a reflective layer with a multilayer optical article having the recited features. Therefore, the rejection should be withdrawn because the Examiner has failed to establish a suggestion, teaching, or motivation in the prior art such as a specific understanding or technical principle that would have suggested the combination to meet claim 11. See, *In re Rouffet*, 149 F.3d at 1350, 1357 (Fed. Cir. 1998); MPEP §§ 2142, 2143.01.

Applicants further submit that the combination of Campbell, Yin, and Yudin, in fact, do not disclose or suggest modifying Campbell to include a reflective layer as recited in claim 11. Yudin discloses a reflective concave diffraction grating formed of a polymer medium having a reflective metal layer for use with wavelength division multiplexing/demultiplexing devices. (col. 8, lines 34-46). The metal layer of the reflective concave diffraction grating is formed on a curved (i.e., concave) surface of a polymer. The structure and materials of a reflective concave diffraction grating as disclosed by Yudin would not suggest to one skilled in the art to modify the disclosures of Campbell and Yin to include a reflective layer as recited by claim 11. Accordingly, the rejection should be withdrawn.

Further, Applicants submit that Yudin is non-analogous art and is therefore improperly combined with Campbell and Yin. To rely on a reference under 35 U.S.C. § 103(a), a reference must be analogous prior art. MPEP § 2141.01(a). In particular, “the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned.” *In re Oetiker*, 977 F.2d, 1443, 1446 (Fed. Cir. 1992). As further explained in *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992), a reference is reasonably pertinent if it “logically would have commended itself to an inventor’s attention in considering his problem.”

With regard to Yudin, it is clear that methods and devices for forming reflective concave diffraction gratings as disclosed by Yudin, and in the field of wavelength division multiplexing/demultiplexing devices, are not in the same field of Applicants' endeavor regarding multilayer optical articles and holographic storage media (e.g., compare Yudin, col. 1, lines 22-25 and col. 8, lines 34-46 with pages 5-6, paragraphs [0011] and [0014] of the present application). It is further evident that Yudin is not reasonably pertinent to the problem addressed by the present application, for example, regarding physical thickness uniformity and improved optical properties (see, e.g., pages 1-4 of the present application). In contrast, the problem and object of the invention disclosed in Yudin include "unacceptable amounts of insertion loss and channel crosstalk" in WDM devices, and to provide "improved wavelength division multiplexing/demultiplexing devices using concave diffraction gratings." (Yudin, col. 2, lines 41-51; col. 3, lines 20-54). A reference disclosing reflective concave diffraction gratings for use in multiplexing/demultiplexing devices would not have logically commended itself to an inventor's attention dealing with a multilayer optical article of improved physical thickness uniformity and improved optical properties.

Accordingly, the rejection should be withdrawn and claims 11, 12, 14, 15, 18, 19, 47, and 48 allowed.

B. Claims 40, 41, 43, 44, 47, and 48

With regard to claim 40, the Examiner stated that Campbell discloses "the same materials...therefore the optically reflective property is inherent." Applicants respectfully disagree and submit that the combination of Campbell and Yin fail to disclose or suggest a multilayer reflective holographic storage system including a first substrate "wherein the first surface is optically reflective." Specifically, Applicants submit the Examiner has improperly relied upon inherency in support of the rejection. Reliance on inherency when the reference is silent about the asserted inherent characteristic requires a rationale or evidence showing inherency. MPEP § 2112. The rationale or evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities." *In re*

Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations omitted) (emphasis added); MPEP §§ 2112, 2131.01.

The Examiner has not offered any evidence or rationale that “the first surface is optically reflective” is necessarily present in the disclosure of Campbell and would be so recognized by persons of ordinary skill. Applicants submit that merely stating the same materials are taught does not provide an adequate rationale or evidence that makes clear that the missing descriptive matter is necessarily present. Further, the present application discloses “a reflective surface 508 on one side of the substrate,” and that a “reflective material formed on the substrate.... may be aluminum, gold, copper, or any other suitable material.” (see, e.g., paragraphs [0040] and [0045]). Thus, the same materials and structure are not disclosed by Campbell and the rejection should be withdrawn.

Further, claim 40 is allowable over Campbell, Yin, and Yudin for at least similar reasons as claim 11 discussed above. In particular, the Examiner has not provided a sufficient teaching, suggestion, or motivation to modify the references to meet the features of claim 40 including “a reflective surface,” the references in fact do not provide a teaching, suggestion, or motivation to modify the references to meet the features of claim 40, and Yudin is improper nonanalogous art under an obviousness rejection.

Accordingly, the rejection should be withdrawn and claims 40, 41, 43, 44, 47, and 48 allowed.

2. Claims 16 and 45 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell in view of Yin and further in view of U.S. Patent No. 4,921,319 to Mallik.

Claims 16 and 45 depend from claims 11 and 40 respectively, and should be allowable for at least similar reasons detailed above. Accordingly, Applicants request withdrawal of the rejection.

3. Claims 17, 46, and 49-53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell in view of Yin, and further in view of U.S. Patent No. 6,434,299 to Yudin et al. (hereinafter "Yudin").

Claims 17, 46, and 50-52 depend from claims 11 and 40 and are allowable over the combination of references for at least similar reasons stated above. Accordingly, Applicants request that the rejection be withdrawn.

4. Claims 13 and 42 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell in view of Yin, and further in view of U.S. Patent No. 6,671,073 to Hegel.

Claims 13 and 42 depend from claims 11 and 40 respectively, and should be allowable for at least similar reasons detailed above. Accordingly, Applicants request withdrawal of the rejection.


CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 495812001900. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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